CLAIMS

Having thus described the preferred embodiments, the invention is now claimed to be:

1. A telescopic table system **(32)** for imaging a subject in at least a first modality **(12)** and a second modality **(14)**, the table comprising:

a base **(108)**;

an intermediate pallet **(78)** having a tip **(110)** and a trailing edge **(96)** mounted to the base for longitudinal movement between at least a retracted position **(A)** and an extended position **(D, E)** with the tip **(110)** extending outward from the base;

a subject pallet **(82)** having a leading edge **(116)** and trailing edge **(102)**; and

bearing supports **(98)** mounted adjacent the subject pallet trailing edge **(102)** such that the subject pallet **(82)** is cantilevered therefrom, the bearing supports **(98)** being mounted to the intermediate pallet **(78)** for longitudinal movement therealong.

2. The system as set forth in claim 1, wherein the cantilevering of the subject pallet **(82)** is constant in all longitudinal positions of the subject and intermediate pallets **(82, 78)** to prevent deflection changes while extending into any of the imaging modalities.

3. The system as set forth in claim 1, further including:

an intermediate support means **(118)** disposed between the first and second modalities for supporting the tip **(110)** of the intermediate pallet **(78)** in the extended position such that the intermediate pallet **(78)** is supported against deflecting as the subject pallet **(82)** moves along the intermediate pallet **(78)** into the second modality **(14)**.

4. The system as set forth in claim 1, wherein the base **(108)** includes a main support pallet **(68)** including a static support member **(86)** which supports the tip **(110)** of the intermediate pallet **(78)** while the subject pallet **(82)** extends into the first modality **(12)** during imaging.

5. The system as set forth in claim 4, wherein the intermediate support **(118)** further includes:

a catcher support member **(124)** which is disposed on a top surface **(126)** of the intermediate support **(118)**, and

a lift mechanism **(122)** which raises the intermediate support **(118)** until the catcher support member **(124)** comes into contact with an intermediate pallet lower surface **(94)** to support the intermediate pallet tip **(110)**.

6. The system as set forth in claim 5, wherein a leading edge **(112)** of the intermediate pallet **(78)** is cantilevered a common distance **(d)** past the catcher support member **(124)** when the subject pallet **(82)** extends into the second modality **(14)** as past the static support member **(86)** when the subject pallet **(82)** extends into the first modality **(12)**.

7. The system as set forth in claim 1, further including:

a locking mechanism **(148, 144)** which locks the intermediate pallet **(78)** against moving until the subject pallet **(82)** is retracted to a substantially fully retracted position with respect to the intermediate pallet **(78)**.

8. The system as set forth in claim 7, further including:

an unlocking mechanism **(140, 142)** which locks the subject pallet **(82)** into the retracted position and releases the locking mechanism **(148, 144)**, permitting the intermediate pallet **(78)** to move, and

a drive mechanism **(146)** which drives the intermediate pallet **(78)** between its fully retracted position and its extended position.

9. The table as set forth in claim 1, wherein the subject pallet **(82)** is manufactured from a stiffened carbon fiber to limit deflection of the subject pallet.

10. A diagnostic imaging system comprising:

a first diagnostic scanner **(16)** of the first modality **(12)**, the first diagnostic scanner **(16)** having a subject receiving bore **(24)**;

a second diagnostic scanner (28) of the second modality (14), having a subject receiving bore (36), the second diagnostic scanner (28) being disposed adjacent the first diagnostic scanner (16) with the second modality subject receiving bore (36) being aligned with the first modality subject receiving bore (24);

an intermediate support (118) disposed between the first and second diagnostic scanners; and,

a telescoping table system (32) as set forth in claim 1, disposed adjacent the first diagnostic scanner (16) for (a) moving the subject pallet (82) through the first modality subject receiving bore (24) and (b) extending the intermediate pallet (78) through the first modality subject receiving bore (24) to the intermediate support (118) and moving the subject pallet (82) along the intermediate pallet (78) through the second modality subject receiving bore (36).

11. A method comprising:

movably mounting an intermediate pallet (78) to a base (60, 62, 68) for longitudinal movement therealong between at least a retracted position (A) and an extended position (D, E); and

movably mounting a subject pallet (82) having a leading edge (116) and a trailing edge (102) on the intermediate pallet for longitudinal movement therealong with bearing supports (98) mounted adjacent the trailing edge such that the subject pallet is cantilevered therefrom.

12. A method of diagnostic imaging using the diagnostic imaging system of claim 10.

13. The method as set forth in claim 12, further including:

loading a subject on the subject pallet while the subject pallet is being supported by the intermediate pallet and the base in the retracted position (A), which base includes a main support pallet.

14. The method as set forth in claim 13, further including:

extending the intermediate and subject pallets simultaneously to the first modality; and

while supporting the intermediate pallet with a static support member **(86)** disposed about a leading edge of the main support pallet, moving the subject support pallet along the intermediate pallet through the first modality subject receiving bore for imaging.

15. The method as set forth in claim 14, further including:

withdrawing the subject support pallet from the first modality to align with the intermediate pallet;

extending the aligned intermediate and subject pallets simultaneously through the first modality to the intermediate support, which includes a catcher support member **(124)** disposed on a top surface of the intermediate support;

raising a lift mechanism of the intermediate support until the catcher support member comes into contact with an intermediate pallet lower surface to support the intermediate pallet; and

while supporting the intermediate pallet with the catcher support member, moving the subject pallet along the intermediate pallet through the second modality subject receiving bore for imaging.

16. The method as set forth in claim 15, wherein a leading edge **(112)** of the intermediate pallet is cantilevered a common distance **(d)** past the catcher support member **(124)** when the subject pallet extends into the second modality as past the static support member **(86)** when the subject pallet extends into the first modality.

17. The method as set forth in claim 15, further including:

retracting the subject pallet, which is loaded with the subject, from the second modality into the retracted position **(A)** in emergency, including the steps of:

(a) locking the intermediate pallet against moving;

(b) retracting the subject pallet through the second modality;

(c) locking the subject pallet into retracted position such that the subject and intermediate pallets are substantially aligned;

(d) unlocking the intermediate pallet; and

(e) moving the intermediate pallet through the first modality into the retracted position (A).